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# Does the Blame Blocking Effect for Assignments of Punishment Generalize to Legal Experts?

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#### Abstract

The paper investigates the blame blocking effect with respect to assignments of punishments and pursues the question of whether the effect generalizes to people with legal education. The blame blocking effect predicts that an agent is punished more severely when an intendedly harmful action does not lead to harm, compared to the case in which the harm results but is caused independently of the agent (Cushman, 2008). Firstly, we replicate the blame blocking effect for people without legal education. Secondly, our findings indicate that this effect is not present in people with a sufficient degree of legal training: In contrast to first-year students – who still seem to exhibit blame blocking – the effect was not observed for people with more than one year of legal education.

**Keywords:** blame blocking, causation, punishment, expertise defense, legal experts, reasoning

## Introduction

There is a bulk of research that draws a negative picture concerning expert judgments. Various types of experts, including physicians, seem to be prone to a number of biases (e.g., base rate neglect) in the same way lay people are (e.g., Kahneman & Tversky, 2000; Gigerenzer, Hertwig & Pachur, 2015).

Likewise, a growing literature is interested in whether this pattern also applies to philosophical expertise. In particular, it has been investigated whether professional philosophers are susceptible to cognitive biases (e.g., order effects) when evaluating hypothetical scenarios (e.g., Schwitzgebel & Cushman, 2012; 2015; Schulz, Cokely & Feltz, 2011; Ryberg, 2012; Tobia, Buckwalter & Stich, 2013; Horvath & Wiegmann, 2016). One main conclusion thereby is that the defense of a particular philosophical expertise (expertise defense) is rather weak (e.g., Machery, 2017).

Whereas the evaluation of hypothetical scenarios has drawn much attention with respect to philosophical expertise, the evaluation of such scenarios from a legal perspective has been largely ignored. This topic is, however, of importance since there are clear, practical implications of whether legal expertise can be defended. In particular, legal expertise is expected to adhere to legal principles and, due to this, might depart from reasoning patterns found in people without legal education. A phenomenon that seems particularly relevant in this context is the blame blocking effect (Cushman, 2008).<sup>2</sup> The blame blocking effect has primarily been investigated outside a legal context and is a particular type of effect that might seem counter-intuitive when applied to assignments of punishment or blame. Compare two agents who aim to harm a person in the same way, and both are unsuccessful. In the first case, the intended victim is not hurt, whereas in the second case the victim is hurt but by means that are independent of the agent's intentions and actions (for examples see Appendix). People then tend to punish the agent *less* in the case in which harm occurred in comparison to the case in which the victim was not harmed.

The blame blocking effect is highly relevant for the evaluation of legal expertise defense for the following reason: While it is controversial whether it involves some kind of cognitive bias (cf., Martin & Cushman, 2016), it is clearly a bias from the legal perspective. It is a common feature of Western penal law systems that in the case of a failed attempt to commit a crime, circumstantial features should be ignored if they are independent of the agent's intentions and behaviors. In particular, for the legal assessment of the criminal responsibility of the agent, it is irrelevant whether the person is harmed independently of the agent's intent and actions.

The blame blocking effect has been taken as evidence for the Two-Process Model of Moral Judgment (Cushman, 2008). This model assumes that two independent cognitive processes contribute to judgments of blame and punishment: one analyzes the mental states of the agent, another causal responsibility for the harmful outcome. When the agent tries to harm the intended victim, and the victim is harmed by independent causal means, the evaluation of the causal responsibility for harm distracts from the evaluation of the culpable mental states of the agent or even completely "blocks" it – leading to a significant decrease in the level of assigned blame and penalty.

The aim of the paper is not to test this theory. We are, rather, interested in determining whether the blame blocking

<sup>&</sup>lt;sup>2</sup> We use the term blame blocking effect to refer to assignments of punishments rather than blame. We do so since the term "blame blocking" is well-established and is used to refer to both blame and punishment (Cushman, 2008).

<sup>&</sup>lt;sup>1</sup> Both authors contributed equally to the paper.

effect (for punishments) can be generalized from people without law education to legal experts. In other words, we aim to test to which degree the expertise defense strategy works for legal expertise with respect to the blame blocking effect for assignments of punishment.

There is, however, some evidence that seems to put such a legal expertise defense for the blame blocking effect into question. Firstly, professional judges' ascriptions of intentionality to the agent have been found to be affected by the valence and severity of the caused harm, which conflicts with the legal concept of *mens rea* (Kneer & Bourgeois-Gironde, 2017). This result is relevant here insofar as it calls into question the systematicity with which legal experts treat hypothetical moral and legal scenarios.

Secondly, there is direct evidence that people with legal education still exhibit the blame blocking effect (Prochownik, 2017). This effect, however, was not stable but varied according to whether the question concerning the assignment of punishment was specified. In particular, the author's results suggest that the blame blocking effect does not occur for people with law education when the question about punishment is embedded in the legal context and explicitly restricted to the total set of the agent's behaviors and facts (specified) but does occur when the question is without such specification (see Appendix). This study was however limited to first-year students of law.

The main purpose of this paper is two-fold. Firstly, we aim to compare the blame blocking effect in people with law education with people without law education. This is because factors that influence blame blocking for people without legal expertise are far from fully understood.

We are specifically interested whether Prochownik's (2017) findings for people with legal education could be replicated and generalized to people without law education. To this end, Experiments 1 and 2 focus on both people with and without legal education. Secondly, we investigate to which degree the blame blocking effect is present in people with legal expertise. We address this question in Experiments 2 and 3. To this end, we distinguish between participants with limited exposure to legal education (first-year students of law) and participants with more exposure ("legal experts" with more than one year of legal studies).

## **Experiment 1**

This experiment aims to investigate the blame blocking effect for people without law education. To this end, we contrast two types of stories: In the first type of story (No Harm) an agent aims to kill a person and does so unsuccessfully with the outcome that the agent is not harmed. In the second type of story (Harm) the agent intends to kill the person, but the person dies for a reason that is unrelated to the agent's intentions and actions. We used two stories (Allergy and Construction) by Cushman (2008) and Prochownik (2017), We also added a third story which was a modified version of the allergy story (see Appendix), since the observed blame blocking effect for people with law education in Prochownik (2017) was largely driven by the construction scenario and not by the allergy case.

We also added a manipulation of how the question was asked and followed in this regard Prochownik (2017). Furthermore, we made a change in the response format used by Cushman (2008) and Prochownik (2017). Rather than employing pre-specified categories concerning the amount of punishment in terms of a prison sentence (None, 6 months, 1/2/4/8/16/32 year(s), Life) we allowed participants to freely indicate the amount of punishment on a scale from 0 to 40 years (in numbers of years). This not only represents a more natural response format in our view but also allows for a simpler analysis in terms of ANOVAs (rather than nonparametric methods).

In line with earlier results, we expected a clear blame blocking effect for people without law education (Cushman, 2008). Following Prochownik (2017), we hypothesized that the blame blocking effect would be attenuated when the question was specified.

#### Method

**Participants.** Since the material was in Polish, only native speakers of Polish were included. The sample was comprised of participants without a university-level law education. A total of 262 participants resulted. 65.4% were male, 34.6% female. The average age was 21.62 years (SD=3.00). 98.9% were students.

**Material and Design.** All material was in Polish. A between-subjects design (3x2x2) was used with the following three factors, respectively: (iii) Story, (ii) Specification, and (ii) Harm. The Appendix describes Stories 1–3, as well as the two types of punishment question (Specification/No Specification), used to elicit participants' responses. Each story had two endings. In one ending no harm occurred. In the other, the person was harmed in a way that was independent of the agent. The unspecified question directly asked participants how much punishment the agent deserves, whereas the specified version put the question in a legal context and asked specifically for punishment according to the total set of agent's behaviors and facts.

**Procedure.** Twelve Questionnaires were composed via Qualtrics, and each condition was randomly assigned to participants via an anonymous link. Participants were recruited via Facebook and university-intern email lists. The data were collected from June to August 2017.

## Results

An ANOVA (3x2x2, between subject design only) yielded the following results: The factor Harm was significant (F(1, 250)=4.763, p<.030,  $\eta^2$ =.019), whereas Specification was marginally significant (F(1, 250)=3.053, p<.082,  $\eta^2$ =.012). Participants gave less severe punishments when harm was present in contrast to stories in which no harm occurred. Furthermore, they tended to punish more severely when the specified question was asked. In addition, the interaction Harm x Specification was significant (F(1, 250)=11.456, p<.001,  $\eta^2$ =.044). If the question was specified, participants punished more severely in the case harm was absent, whereas participants' level of punishment did not differ for both harm and no harm if the question was unspecified.

#### Discussion

The results of Experiment 1 are a replication of the blame blocking effect. Note that these results describe a clear main effect for Harm, an effect that has not been directly observed in Cushman (2008) and Prochownik (2017). Participants gave less severe punishments when the targeted person was harmed that was independent of the agent, compared to the case in which no harm occurred.

However, the pattern described by the interaction of Harm and Specification did not confirm our predictions. In fact, the pattern was the reverse of what had been previously observed by Prochownik (2017). Also, agents were not judged differently based on the type of story.

# **Experiment 2**

The main aim of Experiment 2 was to test whether the blame blocking effect occurs for people with legal education as well. Furthermore, we were interested in whether this effect differed according to the level of legal education. We expected that first-year students might still exhibit the blame blocking effect in contrast to people with more than one year of legal education. This hypothesis is supported by the observation that the law curriculum (in Poland) is designed in such a way that law students learn fundamental principles applicable to the legal system in general during the first year of study, and only undergo a systematic training in the particular domains of law (such as penal law) after completing the first full year. Prochownik's (2017) results, furthermore, indicate that we should expect no blame blocking effect for first-year students if the question is specified.

#### Method

**Participants.** Only participants with (university-level) law education were included. Otherwise, all restrictions from Experiment 1 applied. A total of 235 participants resulted. 53.6% were male, 46% female with one missing value. The average age was 21.25 years (SD=2.71). 98.7% indicated that they were currently enrolled at a university. Participants were asked how many semesters they had studied law. Responses were categorized as follows: less than 1 year of legal studies (58.3%), 1 year completed (17.9%), 2 years completed (10.2%) 3 years completed (8.1%), 4 years completed (4.7%), and 5 years of legal studies or more completed (.9%).

**Material and Design.** The same material and design as in Experiment 1 were used.

**Procedure.** The same procedure and recruiting strategy were employed as in Experiment 1. Data were collected from June to August 2017.

# Results

An ANOVA for the full factorial design with factors Harm, Specification, and Story gave the following results: A significant main effect was found for Harm (F(1, 223)=7.997, p<.005,  $\eta^2$ =.035) and for Specification (F(1, 223)=8.205, p<.005,  $\eta^2$ =.035).

To test whether the level of legal education has an impact on the blame blocking effect, we distinguished between first-year students (participants with less than one year of legal studies, 58.3 %, n=137) and students with more than one year of legal education ("legal experts", 41.7%, n=98). We then entered the resulting factor, Law Level, as an additional factor into the ANOVA. There were statistically significant effects for Specification (F(1, 211)=6.092, p<.014,  $\eta^2$ =.028) and Harm (F(1, 211)=4.830, p<.029,  $\eta^2$ =.022): Higher levels of punishment resulted when either the specified question or the scenario without Harm was used, in comparison to the unspecified question and the scenario with Harm, respectively. Also, the interaction between Harm and Legal Studies was statistically significant, (F(1, 211)=5.624, p<.019,  $\eta^2$ =.026): For first-year students, the punishment was harsher in the No Harm condition compared to the Harm condition, whereas for legal experts no difference between the Harm and No Harm condition was observed.

#### Discussion

The results of the analysis conducted on the total sample of Experiment 2 seem to indicate that the blame blocking effect exists for participants with law education: People punished more harshly when no harm occurred as opposed to when the intended harm was caused independently of the agent.

However, an ANOVA that distinguished between firstyear students and legal experts with more than one year of legal education revealed that the blame blocking effect only occurred in first-year students but was absent in the legal experts. This suggests that the blame blocking effect is still present in first-year students but disappears after that period.

Furthermore, in contrast to Prochownik's (2017) findings, the blame blocking effect did not disappear for first-year students if the question was specified. In general, Experiment 2 suggests that legal training of a year or more is effective insofar as legal experts use the professional standards taught in law school rather than the intuitions found in people without law education.

## **Experiment 3**

The main purpose of Experiment 3 was to replicate the findings of Experiment 2. We hypothesized that the same pattern as in Experiment 2 would emerge: The blame blocking effect would be present for first-year students and absent for legal experts with more than one year of legal education. Moreover, since we did not find any effect involving Story in Experiments 1 and 2, we decided to use only Stories 2 and 3.

## Method

**Participants.** The same exclusion criteria as in Experiments 1 and 2 were applied. A total of 318 participants resulted. 44% were male, 56% female. The average age was 21.47 years (SD=3.79). 95% studied at a Polish university. Legal experience indicated by the participants was as follows: less than 1 year of legal studies (52.8%),1 year completed (16.4%), 2 years completed (6.3%) 3 years completed (7.2%), 4 years completed (6.6%), and 5 years or more completed (10.7%). Only 17.3% had indicated that they had partaken in a similar study before.

**Material and Design.** Only Stories 2 and 3 from Experiments 1 and 2 were used. Otherwise, the material was identical. A 2x2x2x2 design (Story x Harm x Specification x Law Level) resulted, where Law Level distinguishes first-year students from experts with more than one year of legal education.

**Procedure.** The procedure was identical to experiments one and two. Participants were recruited as in Experiments 1 and 2. The recruitment took place in January of 2018.

#### Results

The four-way ANOVA yielded only one significant effect, for Story (F(1, 302)=8.453, p<.004,  $\eta^2$ =.027).

We also ran the ANOVAs with same factors for the pooled sample of Experiments 2 and 3. We restricted the analysis to Stories 2 and 3 to avoid an imbalanced design (Story 1 was only used in Experiment 2; n=481). We found a highly significant effect for Harm (F(1, 465)=8.317, p<.004,  $\eta^2$ =.018) and significant effects for Story (F(1, 465)=6.315, p<.012,  $\eta^2$ =.013) as well as the interaction of Harm and Law Level (F(1, 465)= 5.131, p<.024,  $\eta^2$ =.011), and the interaction between Story, Harm, and Specified (F(1, 465)= 3.902, p<.049,  $\eta^2$ =.008).<sup>3</sup>

#### Discussion

Experiment 3 did not lend support for the interaction between Law Level and Harm observed in Experiment 2, whereas the interaction could be confirmed for the pooled sample of Experiments 2 and 3. One possible explanation for this finding is the time of the third experiment. The experiment took place in January, thereby ensuring that the host of first-year students in this sample already had completed their first semester. This sample of first-year students thus might have already acquired enough legal expertise to make it hard to distinguish them from either lay people (i.e., people without legal education) or people with the legal education of a year and more, with regards to the blame blocking effect.

We addressed the high variability hypothesis by running an ANOVA for the composite sample of Experiments 1-3 (n=650, Stories 2 and 3 only) with the factors Story, Harm, Specification, and a further factor, Extended Law Level,



Figure 1: Means and Standard Errors for the Interaction of Harm and Extended Law Level in the Composite Sample of Experiments 1-3 (Stories 2 and 3 only).

which distinguished between three levels of legal expertise: (a) no legal education, (b) first-year students, and (c) legal experts with more than one year of legal education. The interaction of Harm and Extended Law Level was marginally significant (F(2, 626)=2.790, p<.062,  $\eta^2$ =.009),<sup>4</sup> but manifested the same tendency as our results from Experiment 2. Both, lay people and first-year students, seemed to exhibit the blame blocking effect, whereas law experts with more than one year of law education did not seem to be prone to the same effect (see Figure 1). Such an interpretation seems plausible on the grounds that first-year students still lack a full command of basic penal law concepts and principles and thus are closer to lay people in their reasoning about punishments. So, although we could not fully distinguish first-year students from legal experts in the preceding analyses of Experiment 3, in general they seem to show the same pattern of blame blocking as lay people do.

To further investigate whether first-year students' responses exhibited the same pattern as lay people, we took the total sample of Experiments 1–3 and ran an ANOVA with the factors Story, Harm, and Specification as well as a new factor Expert Non-Expert, which places legal experts with more than one year of legal education in one group and first-year students of law and lay people in the second group (Stories 2 and 3 only). The ANOVA (n=650) found a significant interaction between Harm and Expert Non-Expert (F(1, 634)=6.118, p<.014,  $\eta^2$ =.010).<sup>5</sup> For the group of first-

<sup>&</sup>lt;sup>3</sup> Since we are interested here only in the interaction of harm and law education levels, we do not interpret results that do not pertain to this interaction henceforth.

<sup>&</sup>lt;sup>4</sup> For the sake of transparency we report here the remaining significant effects, which are as follows: Harm (F(1, 626)=15.511, p<.001,  $\eta^2$ =0.24), Story (F(1, 626)=11.260, p<.001,  $\eta^2$ =.018), the interaction of Harm and Specified (F(1, 626)=4.686, p<.031,  $\eta^2$ =.007), the interaction of Harm, Specified, and Extended Law Level (F(2, 626)=3.258, p<.039,  $\eta^2$ =.010), and the interaction between Harm, Story, Specified, and Legal Studies (F(2, 626)=4.731, p<.009,  $\eta^2$ =.015).

<sup>&</sup>lt;sup>5</sup> In addition, the following effects were significant: Story (F(1, 634)=8.462, p<.004,  $\eta^2$ =.013), Harm (F(1, 634)=9.844, p<.002,  $\eta^2$ =.015) and the interaction between Harm, Specified, and Expert No Expert (F(1, 634)=4.076, p<.044,  $\eta^2$ =.006).

year students and laypeople, taken together, the blame blocking effect was observed, whereas no such effect was found for legal experts with more than one year of legal education.

In addition, to ensure that we correctly attribute no blame blocking effect to legal experts, we tested for the existence of this effect only within legal experts from Experiments 2 and 3. (This was necessary since we observed a main effect of Harm in some of the combined samples of first-year students and law experts). In the ANOVA (n=221, Stories 2 and 3 only), neither Harm nor any interaction with Harm was significant.<sup>6</sup> Therefore, no blame blocking effect was observed in legal experts.

# **General Discussion**

We replicated the blame blocking effect for people without law education observed in Cushman (2008), despite the difference in our response formats (see Experiment 1): People punished more severely in scenarios in which no harm occurred in comparison to scenarios in which harm occurred but was caused independently of the agent.

Importantly, the blame blocking effect was only absent in people with a sufficient amount of legal education. Specifically, it did not occur in people with more than one year of legal education (legal experts).

The results for the first-year students of law, on the other hand, were mixed. In Experiment 2, first-year students were found to exhibit the blame blocking effect but did not show this effect in Experiment 3. The failure to replicate the finding from Experiment 2 seems to be due to the timing of the experiments. Experiment 3 took place in January so that a host of participants had already finished the first semester of their legal studies. By contrast, Experiment 2 was conducted from June to August. As a result, many first-year students in Experiment 2 might have been beginners (starting their legal studies in September), thus being practically indistinguishable from lay people.

Despite this, the overall group of first-year students still seems to manifest the blame blocking effect. The comparison with lay people and legal experts (Experiments 1–3) yielded a tendency of first-year students to exhibit the blame blocking effect – as in lay people – whereas legal experts did not show blame blocking (Figure 1). The second comparison in which lay people and first-year students were grouped as one category yielded the same result (Figure 2). In contrast, the analysis of the total sample of legal experts did not support the thesis that the blame blocking effect exists in this group.

Our findings, thus, suggest that legal education has a direct effect on reasoning about legal cases. However, this training only seems to take full effect after completion of the first year of study. One possible reason for this is that students with less than one year of legal education are at that point not fully acquainted with the principles of criminal liability for failed attempts (see Introduction), and pun-



Figure 2: Means and Standard Errors for the Interaction of Harm and Expert No-Expert in the Composite Sample of Experiments 1-3 (Stories 2 and 3 only).

ishments foreseen for these crimes by the Penal Code, which both are expected to have an impact on the presence of the blame blocking effect after a sufficient amount of legal training. First-year students of law are not yet fully familiar with fundamental concepts from a range of domains in law. The variability of their particular legal expertise is further aggravated by the fact that students (in Poland) can often choose in which order to take the basic legal training courses.

Note that we could not identify a clear effect of the specification of the question for eliciting punishment ratings. In particular, we were unable to replicate Prochownik's (2017) finding which indicated that a focus on the totality of behaviors and facts and a contextualization of the question in legal framework (specification) led to an elimination of the blame blocking effect.

Our results also run counter to the study of Kneer and Bourgeois-Gironde (2017). The authors found that professional judges are susceptible to the Knobe effect and the severity effect (i.e., their attributions of intentionality were affected by the valence and severity of outcome). However, based on our study it is hard to judge how both types of effects might impact the blame blocking effect, since we did not manipulate the valence and severity of outcome, nor did they investigate whether their findings generalize from attributions of intentionality to assignments of punishment. This, however, might a fruitful topic for future inquiry.

In light of the general state of expertise defense, the lack of blame blocking effect for legal experts in our study marks a positive departure from the otherwise bleak picture. It suggests that some professional training is effective: Legal training seems to be successful in eliminating the blame blocking effect in legal experts, in line with the (Polish) law.

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<sup>&</sup>lt;sup>6</sup> No main effect or interaction was significant in this sample.

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# References

Cushman, F. (2008). Crime and punishment: distinguishing the roles of causal and intentional analyses in moral judgment. *Cognition*, *108(2)*, 353-380.

Gigerenzer, G. & Hertwig, R, & Pachur, T. (2015). *Heuristics. The foundation of adaptive behavior*. Oxford: Oxford University Press.

Horvath, J., & Wiegmann, A. (2016). Intuitive expertise and intuitions about knowledge. *Philosophical Studies*, *173(10)*, 2701– 2726.

Kahneman, D. & Tversky, A. (Eds., 2000). *Choices, values, and frames*. Cambridge: Cambridge University Press.

Kneer, M. & Bourgeois-Gironde, S. (2017). Mens rea ascription, expertise and outcome effects. Professional judges surveyed. *Cognition*, *169*, 139–146.

Machery, E. (2017). *Philosophy within its proper bounds*. Oxford: Oxford University Press.

Martin, J. W., & Cushman, F. (2016). The adaptive logic of moral luck. In J. Sytsma & W. Buckwalter (Eds). *A companion to experimental philosophy* (pp. 190-202). Oxford: Blackwell.

Prochownik, K. (2017). Do people with a legal background dually process? The role of causation, intentionality and pragmatic linguistic considerations in judgments of criminal responsibility. In J. Stelmach, B. Brożek & Ł. Kurek (Eds.), *The province of jurisprudence naturalized* (pp. 168-194). Warsaw: Wolters Kluwer.

Ryberg, J. (2012). Moral intuitions and the expertise defense. *Analysis*, 73, 3-9.

Schulz, E., Cokely, E. T., & Feltz, A. (2011). Persistent bias in expert judgments about free will and moral responsibility. A test of the expertise defense. *Consciousness and Cognition*, 20(4), 1722-1731.

Schwitzgebel, E., & Cushman, F. (2012). Expertise in moral reasoning? Order effects on moral judgment in professional philosophers and non-philosophers. *Mind & Language*, 27(2), 135-153.

Schwitzgebel, E., & Cushman, F. (2015). Philosophers' biased judgments persist despite training, expertise and reflection. *Cognition*, 141, 127-137.

Tobia, K., Buckwalter, W., & Stich, S. (2013). Moral intuitions: Are philosophers experts? *Philosophical Psychology*, *26(5)*, 629-638.

#### Appendix

**Story 1 (Allergy 1).** TOM and MARK are two runners scheduled to compete in a championship race. Mark holds the current world record and is widely expected to win the race. Tom plans to eliminate Mark from the race.

Tom is absolutely sure that Mark is allergic to peanuts, and that eating peanuts will kill him. Tom decides to sprinkle some peanuts on Mark's food if Mark gets up to go to the bathroom. But it turns out that Tom is incorrect, Mark is not allergic to peanuts at all.

[*Harm Continuation*: Instead, Mark is fatally allergic to shellfish. At the athlete's banquet a few days before the race, there are shellfish in the salad that Mark is served.

Mark takes a few bites and then gets up to go to the bathroom. Tom sprinkles peanuts on Mark's food. Mark comes back and finishes the salad. The peanuts don't harm Mark at all, but because of the shellfish, Mark dies.]

[*No Harm Continuation*: At the athlete's banquet a few days before the race, Mark takes a few bites of his salad and then gets up to go to the bathroom. Tom sprinkles peanuts on Mark's food. Mark comes back and finishes the salad. The peanuts don't harm Mark at all.]"

**Story 2 (Allergy 2).** TOM and MARK are two runners scheduled to compete in a championship race. Mark holds the current world record and is widely expected to win the race. Tom plans to eliminate Mark from the race.

Tom is absolutely sure that Mark is allergic to peanuts, and that eating peanuts will kill him. Tom decides to sprinkle some peanuts on Mark's food if Mark gets up to go to the bathroom. He is absolutely sure of his decision.

At the athlete's banquet a few days before the race, Tom sprinkles peanuts on Mark's food, when Mark gets up to go to the bathroom. On his way back, though, Mark changes his mind and decides that he rather prefers to go back to his hotel room, and order something to eat from there.

[*Harm Continuation*: Mark comes back to his hotel room and orders a salad. There are shellfish in the salad that he is served. He finishes the salad. Because of the allergic reaction to shellfish, Mark dies.]

[*No Harm Continuation*: The peanuts don't harm Mark at all.]

**Story 3 (Construction).** TOM and MARK are two engineers working at a construction site. Mark is a current construction manager. Tom believes that if he eliminates Mark he will be promoted to Mark's position. Tom plans to kill Mark.

One night Mark is working alone at installing the electrical wiring. For safety reasons, the electric current in the wiring is switched off. Tom decides to sneak over to the wiring system, turn it on, and kill Mark by inducing electric shock. He is absolutely sure of his decision. However, Tom does not know that the electrical wiring is faulty and that no electric current can flow through it. Tom sneaks over to the wiring system and turns it on when Mark is working. Because the wiring is faulty the electric current does not flow.

[*Harm Continuation*: Mark is not harmed at all. Suddenly a strong wind begins to blow and shakes a scaffolding, under which Mark is standing. Due to the wind a heavy beam breaks away from the scaffolding and knocks over Mark. As a result of the blow from the beam Mark dies.]

[No Harm Continuation: Mark is not harmed at all.]

**Question without Specification.** In your opinion, how much prison time does [agent] deserve?

**Question with Specification.** Suppose that [agent] were apprehended by the police and put on trial. Given the complete set of behaviors and facts, in your opinion how much prison time does he deserve?